Overview of the National Center for Environmental Assessment (NCEA)

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Briefing Prepared for Richard Yamada

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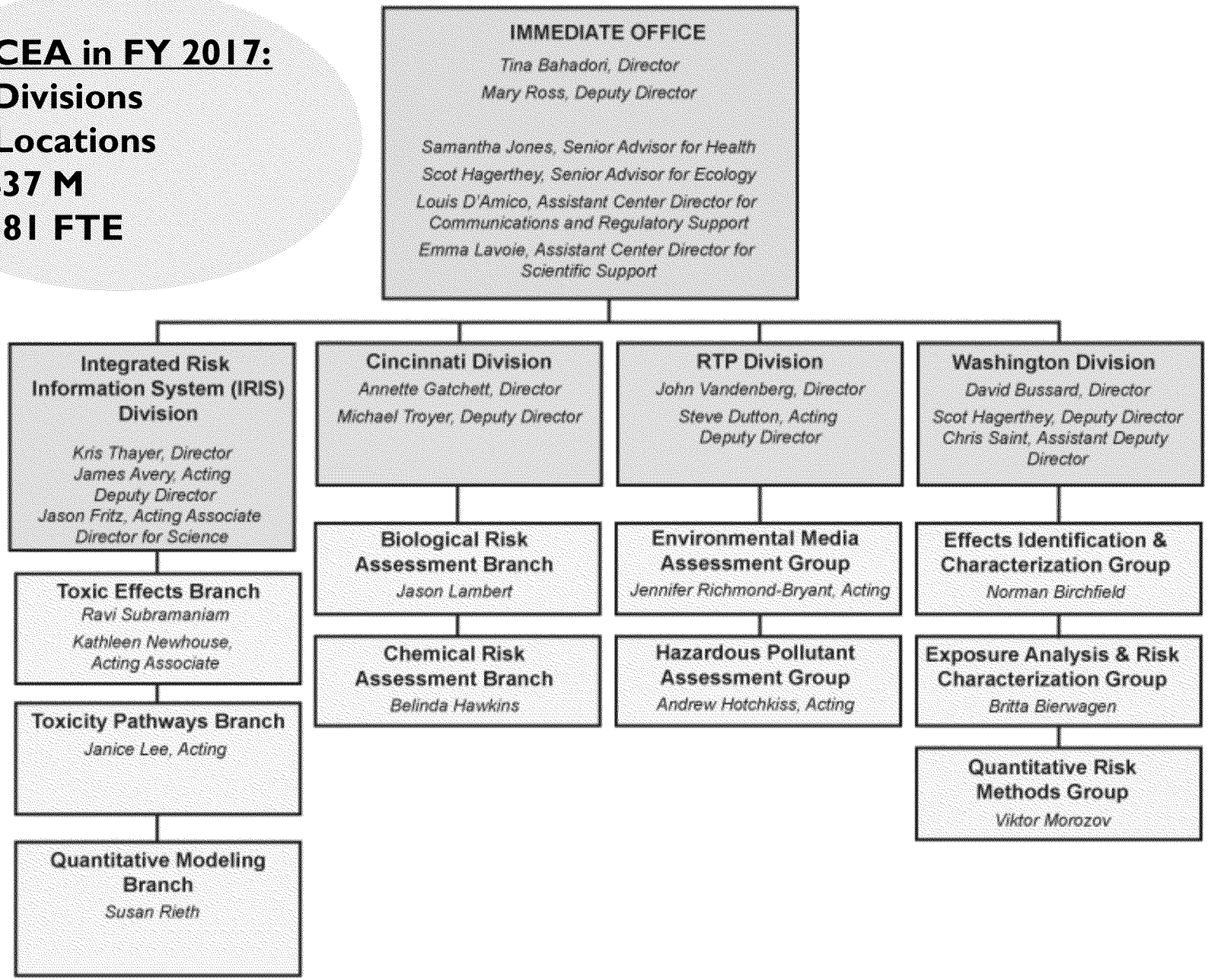
Outline

National Center for Environmental Assessment

NCEA in FY 2017:
4 Divisions
3 Locations
~$37 M
~181 FTE



New Leadership Structure

- **In January 2017, EPA appointed new leadership to the National Center for Environmental Assessment and to its IRIS Program.**
  - With significant experience in the chemical industry, and formerly the Director of ORD's Chemical Safety for Sustainability National Research Program, the new NCEA Director brings knowledge of TSCA, innovative applications of computational toxicology, and exposure science.
  - As a recognized leader in systematic review, automation, and chemical evaluations, the new IRIS Program Director brings experience in early partner and stakeholder engagement and input, and demonstrated actions to increase capacity and transparency in assessments.
- **Improved responsiveness and accountability through Senior Leadership Team**
  - NCEA IO
  - Divisions
  - Integrating across the spectrum of human and ecological RA practices

NCEA's Risk Assessments at EPA

NCEA's unique and essential role:

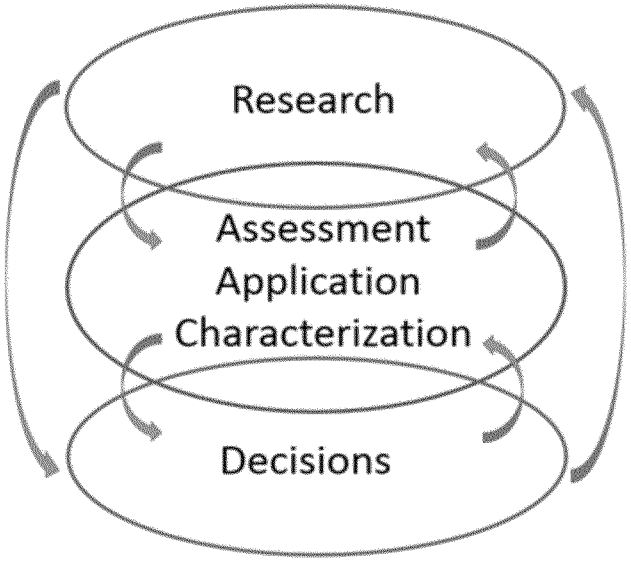
- Experienced and multi-disciplinary teams integrating and synthesizing findings from large bodies of evidence to develop scientific assessments
- Translating research and communicating scientific findings to inform Agency and State and local agency partner decisions

Critically positioned between:

- Researchers – inside and outside EPA -- who are generating new findings and data

AND

- EPA Program and Regional offices, states and local agencies who must make regulatory, enforcement, and remedial actions and decisions



https://www.epa.gov/risk

NCEA in the ORD Matrix

FY17 Research Action Plan (RAP) Resources: $7.6M and 124.1 FTE

HUMAN HEALTH RISK ASSESSMENT (HHRA)

- Integrated Risk Information System
  - $2.6M; 56.6 FTE
- Integrated Science Assessments
  - $0.8M; 26.0 FTE
- Superfund Support
  - $1.2M; 13.2 FTE
- Advanced Analyses
  - $1.2M; 5.6 FTE
- **Total: $5.8M; 101.4 FTE**

AIR, CLIMATE & ENERGY (ACE)

- Multi-environmental stresses on-
  - Health & Air;
  - Water & Ecosystems; and
  - Urban Systems
- **Total: $1.1M; 8.8 FTE**

SUSTAINABLE AND HEALTH COMMUNITIES (SHC)

- Report on the Environment (ROE)
- **Total: $0.4M; 5.1 FTE**

SAFE & SUSTAINABLE WATER RESEARCH (SSWR)

- Hydraulic Fracturing Assessment
- Ecological Causal Assessment
- **Total: $0.3M; 8.8 FTE**

NCEA and HHRA

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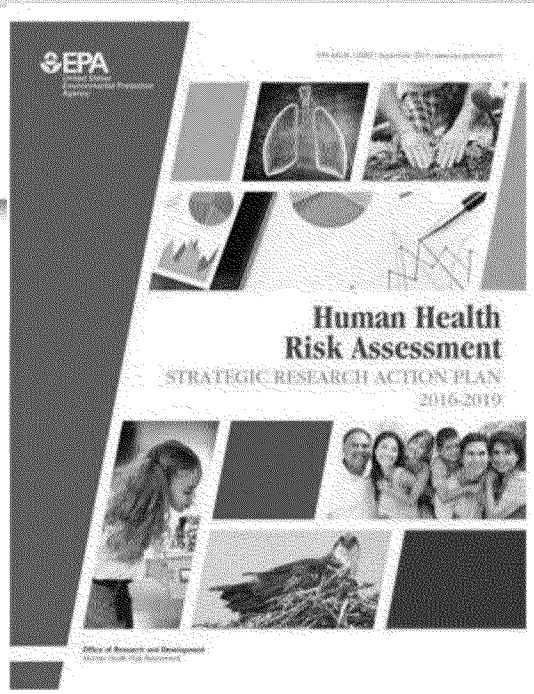


- The HHRA National Research Program (NRP) is also led by the NCEA Director.
- From the inception of the "ORD Matrix" this integrated management model was conceived to help transform the science and practice of risk assessment.
- Tina Bahadori's experience as former Director of CSS NRP with emphasis on comptox research will help meet this objective.

NCEA Assessments Provide Scientific Foundation for Regulatory & Policy Decisions

- **Integrated Risk Information System (IRIS) provides a critical part of the scientific foundation for decision-making by EPA's Program/Regional offices, states, and local agencies under an array of environmental laws (e.g., Clean Air Act, Safe Drinking Water Act, and Comprehensive Environmental Response, Compensation, and Liability Act). For example:**
  - Risk and Technology Reviews under Title III of the Clean Air Act; court ordered deadlines to evaluate residual risks from hazardous air pollutant emissions from 20 source categories in 3 years.
  - TSCA: extensive support provided for implementation of Lautenberg Act.
  - Drinking Water standards under the Clean Water Act.
- **Superfund: Provisional Peer Reviewed Toxicity Values (PPRTV) and IRIS inform EPA's clean-up decisions at contaminated Superfund and hazardous waste sites.**
  - Office of Land and Emergency Management (OLEM) does not conduct its own risk assessments.
- **Integrated Science Assessments support National Ambient Air Quality (NAAQS) reviews mandated under Title I of the Clean Air Act.**
- **NCEA produces high impact environmental assessments that support EPA and state decisions on water quality criteria, Clean Water Act rulemaking.**

Scientific and TechnicalSupport to EPA Programs, Regions, States

- **NCEA Scientists are frequently called upon for scientific support.**
  - For example, in winter 2017,30 staff reported 68 requests translating to 639 hours of support on a broad array of issues for Program and Regional offices in just one month.
- **Critical support to OPPT– TSCA implementation**
  - Systematic Review – expertise, guidance, training and tools
  - Data management and access through NCEA's Health and Environmental Research Online (HERO) database
  - Expertise for risk evaluations – now 10 and eventually 20 chemicals at a time
    - Primary support for asbestos and hexabromocyclododecane (HBCD)
- **Clean Water Act Rules:**
  - Pharmacokinetic modeling support for the Lead & Copper Rule, and for Maximum Contaminant Level Goal for perchlorate
- **Responding to state and local Agency needs; a few examples:**
  - Louisiana: potential cancer risk related to chloroprene emissions at elastomer facility
  - Texas and Region 6: emergency health risk analysis for contaminant release from asphalt plant to drinking water system in Corpus Christie in December 2016
  - West Virginia and Region 3: health risk analysis of methylcyclohexanemethanol (MCHM) for emergency clean up in the Elk River
  - Pennsylvania and Region 3: use of causal analysis for source of fish kills in Susquehanna River

- **Integrated Risk Information System (IRIS)**
- **Created in 1985 to foster consistency in the evaluation of chemical toxicity across the Agency.**
- **IRIS assessments contribute to decisions across EPA and other health agencies**
  - Health-based national standards
  - Health-based clean-up levels at local sites
  - Health-based advisory levels
  - Information for the general public
  - Ranking across chemicals
  - Cost-benefit analyses
- **Toxicity values**
  - Noncancer: Reference Doses (RfDs) and Reference Concentrations (RfCs).
  - Cancer: Oral Slope Factors (OSFs) and Inhalation Unit Risks (IURs).
- **IRIS is the only federal program to provide toxicity values for both cancer and non-cancer effects.**

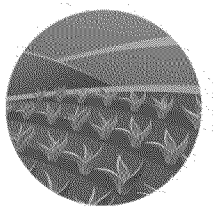
IRIS Addresses Agency Priorities and Mandates

IRIS

- Clean Air Act (CAA)
- Safe Drinking Water Act (SDWA)
- Food Quality Protection Act (FQPA)
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Resource Conservation and Recovery Act (RCRA)
- Toxic Substances Control Act (TSCA)

Broad Input to Support

- **Agency Strategic Goals**
- **Children's Health, Environmental Justice**



Integrated Science Assessments: Supporting Mandated Review of the National Ambient Air Quality Standards

Clean Air Act:

CAA 108 of the Clean Air Act requires "issuance of air quality criteria" that includes information on "..the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of [the pollutant] in ambient air…" and CAA 109 requires establishment and review of air quality standards.

Integrated Science Assessments (ISA):

Review, synthesize and integrate evidence across scientific disciplines.

- Many thousands of studies are evaluated

Key conclusions from the ISAs include:

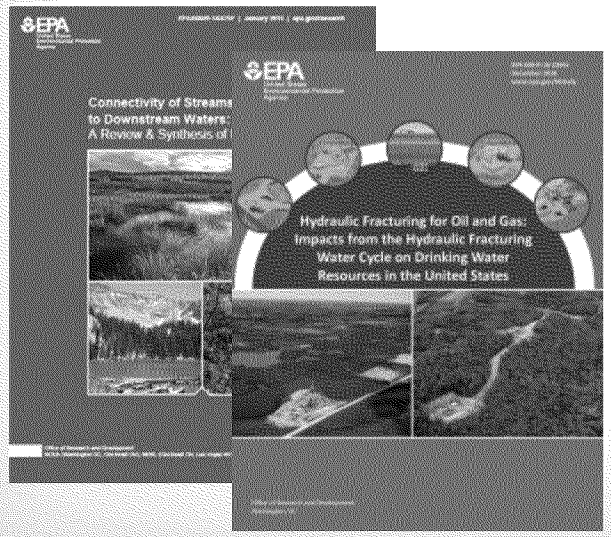
- Determinations on the weight of evidence for causation of health and welfare effects
- Conclusions on at-risk populations
- Scientific conclusions on policy-relevant issues including shape of concentration-response functions and presence or absence of discernable thresholds
- www.epa.gov/isa

Superfund and TechnicalSupport

- **Provisional Peer-Reviewed Toxicity Values (PPRTV) support EPA's Superfund program; target of 12 assessments per year**
  - Use the same Agency guidance as IRIS assessments, external peer review
  - Are publicly available at http://hhpprtv.ornl.gov
- **Superfund Technical Support Center provides scientific and technical support to OLEM, Regional and State parters**
  - Superfund hotline responds to ~50 requests/yr that require significant levels of support
  - Requests include rapid response and emergency actions (e.g., Elk River MCHM spill; Lower Passaic River, etc.), support with use of published PPRTVs, evaluation of published health values from EPA and other Agencies (e.g., ATSDR MRLs) for use by partners

Environmental Assessments

- **High profile assessments support regulatory and policy decisions for Office of Water, Regions and States**
  - Support to OW & Regions to develop benchmarks for conductivity
  - Assessment of Mountaintop Mining that provided support for OW guidance and action under CWA 404(c)
  - Evaluation of potential impacts of large-scale mining activities on salmon resources in Bristol Bay, Alaska



- Connectivity of Waters of the United States: Synthesis of the scientific evidence on the connectivity of streams, wetlands, and open waters to downstream waters; scientific foundation for rulemaking to clarify CWA jurisdiction.
- Hydraulic Fracturing Drinking Water Assessment

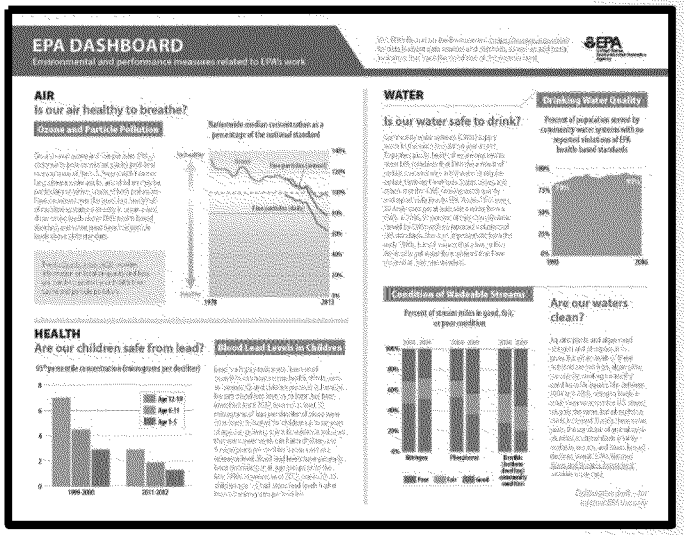
NCEA continues to work with OW to translate science to effective policy, guidance, rules, and regulatory action.

EPA's Report on the Environment

The Report on the Environment (ROE) provides environmental policy decision makers and others with scientifically defensible, up-to-date, objective, and relevant indicator-based ***products*** that are of ***national importance*** for protecting human health and the environment.

https://www.epa.gov/roe

Report Trends	• Status and trends of the environment and human health represented by 80+ indicators
Develop Indicators	• Develop indicators on important issues to EPA
Inform EPA Priorities	• Inform development of Agency activities and priorities
Communicate with Public	• Communicate the state of the nation's environment in an accessible way



STATE OF THE ENVIRONMENT DASHBOARD

NCEA is working with the Office of Policy to develop the dashboard; requested by the Office of the Administrator

NCEA Highlights

- **Scientific Assessments that EPA and States need to support regulatory and policy decisions**
  - Portfolio of scientific assessments for human health (IRIS, ISA, PPRTV) and environmental impacts provide broad support under many EPA statutes
  - NCEA produces ~90% of ORD's "highly influential scientific assessments"
  - Leading the agency in advancing methods and approaches for scientific assessment: Systematic review, evidence integration, dose-response methods, assessment tools & guidance.
- **Rapid response to many requests for scientific and technical support from States, EPA programs and regions, translating and communicating scientific findings to inform risk assessors and regulators.**